careful consideration. Of especial interest in the recent parts are the three means for ascertaining disease, which are presented at length (pp. 494 *et seq.*): instructions of the inspired, observation, and inference. The matters about which the inspired lay down instruction are discussed, then those which are apprehended by observation, and finally those which are to be ascertained by inference, and the manner in which they are to be known. These matters might well be studied by the modern author, to the end that his reader may be a "physician, conversant with both diagnosis and treatment, who is never at a loss to achieve success." Extended acquaintance with the work confirms in all particulars the commendation hitherto expressed, and we hope that the translator will receive sufficient encouragement to carry on his work to completion, thus earning the thanks of the liberally educated physician. R. W. W.

PRACTICAL HANDBOOK OF THE DISEASES OF THE EYE. By CHALMERS WATSON, M.B., C.M., Ophthalmic Surgeon Marshall Street Dispensary, Edinburgh. With nine colored plates and twenty-four illustrations in the text. New York: The Macmillan Company, 1897.

THIS little book, of 250 12mo. pages, well occupies the place for which its author designed it, that of a clinical *vade-mecum* and an introduction to standard works on ophthalmology. It shows, what is rare among books of its class, very thorough working over of the material it contains into definite shape, that will help to fix it in the memory and make it convenient for quick reference.

It is divided into twenty-two chapters, and each chapter is divided by headings, subheadings, and lettered paragraphs. Thus, in Chapter VIII., Diseases of the Iris and Ciliary Processes, we find the headings Structure and Innervation of the Iris, Serous Iridocyclitis, Cyclitis, and Sympathetic Ophthalmitis. And under this last we have first a definition, then as subheadings: Causes, Clinical Features, Theories of Occurrence, Treatment, and Guiding Rules for Enucleation. The selection and arrangement of type have been such as strongly to emphasize this systematic arrangement of the matter.

In regard to the matter itself, nothing original could be expected in a work of its scope. But it is clearly the selection of one who has done extensive and careful reading, and who has had good clinical training, but who has not had the opportunity to sift what he has read and heard by extended personal experience.

The nine colored plates, representing different conditions of the fundus as revealed by the ophthalmoscope, are a unique feature in a book of this class; and although extremely simple and rather diagrammatic, they are well executed, and probably will prove very instructive to the medical student, to whom such representations are of more value than to ophthalmolgists who have become acquainted with the appearances they are intended to represent, and who, therefore, are more conscious of the defects of all such representations. E. J.

PROGRESS

OF

MEDICAL SCIENCE.

THERAPEUTICS.

UNDER THE CHARGE OF

REYNOLD W. WILCOX, M.D., LL.D.,

PROFESSOR OF MEDICINE AND THERAPEUTICS AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; VISITING PHYSICIAN TO ST. MARK'S HOSPITAL.

Angina Pectoris Treated by Erythrol Tetranitrate.—DR. J. B. BRADBURY reports a single instance of the successful use of this remedy. The patient, a medical man, states that life was rendered infinitely more tolerable, and the potency of the remedy having been abundantly demonstrated, he took it steadily at about eight hour intervals, in grain doses, as a prophylactic. For three days there was immunity from attacks, although some weariness and oppression would come on after a lapse of six or seven hours after taking the tablets. By making use of four doses daily he hoped to "keep the foe at bay altogether." The initial fall of tension depends upon the mode of administration. If the formula—drug, one grain; alcohol, one drachm; water, seven drachms—be used, the pulse-tension begins to fall in from two to three minutes; if given in pill-form and swallowed, the time is from twenty to forty minutes; if taken in tablet-form and masticated, the time lies somewhat between the two, and the last-mentioned form is the best. The alcoholic solution sometimes irritates the stomach. This drug was not introduced for the purpose of replacing amyl nitrite and nitroglycerin in cutting short attacks which have developed, but only to replace them in preventing the onset of the attacks. This instance shows that it is capable of doing this much better than nitroglycerin, the best drug which we have hitherto had for this purpose.—*British Medical Journal*, 1897, No. 1893, p. 907.

The Action of Substances of the Digitalis Series on the Circulation in Mammals.—DR. ARTHUR R. CUSHNY has conducted an elaborate investigation. The apparatus used was that of Roy and Adami, artificial respiration being supplied for small animals by an air-pump and Runne's interrupter, while for large dogs the ordinary hand-bellows were made use of. In cats the poison was injected by the jugular, in dogs by the saphenous vein, generally in 0.1 per cent., in some cases in 0.2 per cent. solution. Most frequently strophanthus was used, but several experiments were made with digitalinum verum, antiarin, digitalin, erythroplœin hydrochlorate, and convallamarin. The action of all of these on the cardiac muscle is identical in kind, although varying in strength. Thus digitalinum verum and erythroplœin proved to be the weakest of all, while antiarin and strophanthus were the strongest, and convallamarin and digitalin occupied an intermediate position. It has been shown that the different members of this series probably diverge considerably in the strength of their vascular as compared with their cardiac action. They also differ in the relative degree to which each acts on the inhibitory apparatus and the cardiac muscle. Thus erythroplœin undoubtedly acts less on the cardiac muscle and more upon the vagus centre than any of the others examined. During the stage of vagus stimulation with strophanthus there was a slowing, due entirely to the inhibitory apparatus, and this is altogether absent in hearts in which this has been paralyzed by atropine, and there is an increase in systole, which undoubtedly is due to direct action upon the cardiac muscle. The muscular action of digitalis extends to the auricle as well as to the ventricle, although in the former it is often concealed, owing to the inhibitory mechanism having more influence on that division of the heart, and there opposes it more directly than in the ventricle. In some cardiometric tracings from the cat's heart under these drugs the systolic volume of the heart actually decreased, while in others it remained practically unchanged, and in others (more especially with erythroplœin) a rapid increase in the total amount of blood contained in the heart at the end of the ventricular systole manifested itself. In one set of observations the increased completeness of ventricular systole was evidently sufficient to compensate for the increase in the residual blood of the auricle, or possibly these may have been cases in which the muscular action was equally marked in the auricle and ventricle. In the last there is no doubt that the ventricular contraction was increased, but this was masked entirely by the increase in the residual auricular blood. The "contraction volume" or output of the ventricles per beat is uniformly much increased, whether slowing of the rhythm is marked or not. This is, of course, due to the increased systole, aided in some cases by an increased dilatation of the ventricles. In regard to the amount expelled per unit of time, the results varied a great deal, according to the extent to which slowing of the rhythm occurred. In those cases in which the change of rhythm was but slight the blood expelled in ten seconds was distinctly augmented, while in other experiments in which more marked slowing occurred the output, although at first increased while the retardation was slight, later became practically normal, and still later, when extreme slowing set in, sank below the normal. The increase in output may be very considerable, amounting in some cases to 50 per cent., and between this and a decrease every gradation may be met with. In the irregular or periodic stage of the heart's action the cause is to be found in the increasing irritability of the cardiac muscle, with or without the antagonistic inhibitory mechanism coming into play. Similar features occur in the later stages of poisoning with other drugs, such as aconitine. The results of the cardiometric tracings throw considerable light upon the cause of the increased blood-pressure in the first stage. From these it is seen that the